

Impact of financial literacy on Credit Availability of farmers in Jiangsu Province China: A mediation effect of risk attitudes

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Abstract

The level of financial literacy of farmers is an important condition for determining whether their credit needs can be effectively met. The objectives of this study are to explore the rural credit model in China, to understand the credit needs of farmers, to improve the existing credit constraints in rural areas, to increase the availability of credit to farmers, to promote the development of rural finance, and to better serve the production and life of farmers. Based on this, this study, on the basis of combing the literature, establishes a theoretical model to explore in-depth the mechanism of the influence of financial literacy of rural households on their level of access to credit in Jiangsu, China, based on the perspective of the mediating effect of the risk attitudes of rural households. The result of the study shows that, firstly, financial literacy has a significant effect on risk attitude and credit availability. Secondly, the effect of risk attitude on credit availability is significant. Thirdly, risk attitude plays a partially mediating effect in the impact of financial literacy on credit availability, i.e., the higher the level of financial literacy, the more risk-averse the farmers are and thus more likely to choose formal credit.

Keywords: *Financial Literacy ; Credit Availability ; Risk Attitude; Mediating Effect.*

Introduction

As an important part of modern finance, rural finance provides strong financial support for the development of rural economy and the increase of farmers' income. However, because of the unbalanced distribution of credit resources in our country and the knowledge structure of farmers themselves, farmers always face the difficult dilemma of loan. The problem that farmers' capital demand cannot be effectively met will affect the production and management activities of farmers, and then affect the development of the whole rural economy. Therefore, it is necessary to deeply explore the rural credit model, understand the credit needs of farmers, improve the current situation of rural credit constraints, improve the availability of credit for farmers, promote the development of rural finance, and then better serve the production and life of farmers.

With the acceleration of the process of agricultural modernization, the types of rural credit products and services have increased, and the credit market environment has become more complex, which has met the diversified needs of people and also has higher

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requirements for the financial literacy level of farmers. However, at present, the level of financial literacy of rural residents is generally low, the popularization of financial knowledge in various regions is not enough, and farmers' enthusiasm for learning is not strong and initiative is not high, resulting in the lack of relevant financial knowledge, the problem of loan constraints is increasingly severe, and farmers' credit demand is still difficult to be effectively met.

Based on this, on the basis of literature review, this paper establishes a theoretical model and, from the perspective of the intermediary effect of farmers' risk attitude, deeply explores the mechanism of the influence of farmers' financial literacy on their credit access level in Jiangsu province, China.

This study may help to understand the specific situation of farmers' financial literacy and risk attitude in Jiangsu province, China, and then proposes effective improvement measures according to the performance characteristics of farmers' financial literacy and risk attitude, so as to improve their financial literacy level and attitude towards risk, so as to enhance their credit availability.

Literature Review

As an important part of farmers' individual capital, financial literacy can not only help farmers normalize financial information and scientifically control risks, but also enable farmers to rationally allocate assets and scientifically manage financial management, which is very important and necessary for farmers' daily economic activities and decision-making. Lusardi (2017) found that a wider range of financial knowledge helps farmers accurately grasp the risks of different credit methods and make correct choices. Allgood and Walstad (2016) found that when comparing adults with high and low levels of financial literacy, financial literacy seems to change these financial behaviors, and overall, the beneficial effects of financial literacy may have a significant impact on financial practices or behaviors frequently recommended by financial professionals or experts. Li et al. (2020) proposed that residents with more financial knowledge and more experience are more willing to borrow from banks, and their personal ability level can also improve the family's loan application ability, and they can complete the whole loan process better and faster, and the loan success rate is higher. Thus, according the above argument, it is posited that:

H1 : There is a positive association between Financial Literacy and Credit Availability

Dohmen (2008) pointed out that people who know more about the financial market tend to be less worried about unknown risks. Such people have higher financial literacy and stronger psychological endurance, and their attitude toward risk is also related to their choice of lending. Tang et al. (2017) proposed that the cognition level of farmers is an important basis for them to choose financial behaviors, but only relying on their own cognition is relatively narrow, prone to wrong judgments, and there is no way to scientifically assess risks, which will lead to wrong decisions. Therefore, risk attitude is essential at this time. Yang (2020) found that residents have more financial knowledge, their understanding of risks will also change, and then change their attitude towards risks, which will ultimately affect how residents choose credit products. Zhou et al. (2020) proposed in their study that residents' potential attitude towards unknown risks is actually derived from the financial information and knowledge they have mastered. Therefore, to improve their risk attitude, measures can be taken to transfer financial knowledge and corresponding skills. Thus, according the above argument, it is posited that:

H2 : There is a positive association between Financial Literacy and Risk Attitude

Farmers' potential attitude towards risk, that is, their perception of risk, will directly and obviously affect the various stages of their different economic activities. Guerrieri et al.

(2017) believed that residents' different risk attitudes would lead to differences in their participation in the stock market. Generally, residents who choose to avoid risks are not keen on investment, but prefer to save. Luo (2016) proposed in his research that farmers with higher risk aversion usually subconsciously reject high-risk financial products and prefer to avoid losses at the root. Such farmers prefer to carry out economic activities with lower risks, such as saving, buying insurance and buying national bonds, while they are very careful about risky behaviors such as loans. Those who like to take risks, risk appetite type of farmers are more bold, will be willing to buy stocks, willing to take loans. Zhang et al. (2018) found that in China, most people are cautious and unconsciously risk averse, and only a small number of residents are "brave", they are not afraid of risks, and this type of residents are more likely to accept borrowing from formal credit, and the higher the possibility of obtaining formal credit. Thus, according the above argument, it is posited that:

H3 : There is a positive association between Risk Attitude and Credit Availability

Yin et al. (2023) found that residents have more financial knowledge, and their understanding of risks will also change, which will change their attitude towards risks, which will ultimately affect how residents choose credit products. Hu (2018) Compared with the other two types of families, families with risk appetite have a higher probability of participating in the financial market and are more likely to obtain formal credit. Meanwhile, the research also found that not only individual financial knowledge and risk attitude will promote the family's financial activities, but also the product of the two will play a certain role. If both of them are improved, the family will be able to obtain formal credit. Households are more actively engaged in financial activities and thus more likely to participate in formal credit markets. Zhou et al. (2020) showed that in the process of financial literacy affecting consumers' credit decisions, residents' perceived risks play an intermediary effect. The higher the level of financial knowledge, the better consumers understand the loan procedures and the more comprehensive their understanding of risks, the better they can grasp risks and know the countermeasures, and the better they can accept loans. Thus, according the above argument, it is posited that:

H4. Risk Attitude mediates the relationship between Financial Literacy and Credit Availability

Research Method

The questionnaire survey method was adopted in this study. Due to the specific sample size, simple random sampling was adopted in rural areas of Jiangsu Province, China. The questionnaire includes three variables of financial literacy, risk attitude and credit availability, as well as demographic statistics. The questionnaire used a five-level Likert scale, with 5 representing strongly agrees and 1 representing strongly disagree. Researchers sent out 400 questionnaires, after eliminating invalid questionnaires, a total of 387 valid questionnaires were collected.

Results of the Study

In this study, spss19.0 was used for reliability and validity test, and then Aoms19.0 was used for confirmatory factor analysis and structural equation model was constructed. The research results are as follows:

Table 1 : Validity and Reliability Analysis

	1	2	3	Cronbach's Alpha
YA4	0.821	0.196	0.154	0.797
YA1	0.812	0.262	0.170	
YA3	0.805	0.123	0.183	
YA2	0.804	0.255	0.207	
XA2	0.158	0.806	0.027	0.840
XA3	0.167	0.775	0.092	
XA1	0.150	0.768	0.126	
XA4	0.232	0.712	0.046	
MA4	0.105	0.082	0.796	0.875
MA2	0.149	0.165	0.773	
MA3	0.126	0.072	0.764	
MA1	0.250	-0.028	0.736	
Total	2.868	2.573	2.512	
% of Variance	23.900	21.439	20.936	
Cumulative %	23.900	45.339	66.275	

KMO=0.875, Bartlett=1885.687,df=66, sig.=0.000

According to Table 1, the minimum reliability value is 0.797, which is greater than 0.7. The variables have good internal consistency. As a result of exploratory factor analysis, KMO value is 0.875, Bartlett = 1885.687, df is 66, and significance is 0.000. The total variance explanation rate after rotation is 66.275%, which is greater than 60%.

Table 2 : Confirmatory Factor Analysis

Variable	Item	Standardized Estimate	S.E.	AVE	CR
Financial Literacy	XA1	0.708	0.269	0.500	0.800
	XA2	0.745	0.269		
	XA3	0.716	0.187		
	XA4	0.660	0.243		
Risk Attitude	MA1	0.685	0.247	0.493	0.795
	MA2	0.732	0.236		
	MA3	0.677	0.267		
	MA4	0.713	0.235		
Financing Availability	YA1	0.835	0.145	0.647	0.880
	YA2	0.837	0.197		
	YA3	0.743	0.144		
	YA4	0.798	0.167		

CMIN=56.364, DF=51, CMIN/DF=1.105, GFI=0.976, AGFI=0.964, NFI=0.970, RFI=0.962, IFI=0.997, TLI=0.996, CFI=0.997, RMSEA=0.017

According to the confirmatory factor analysis in Table 2, the minimum value of CR of combination reliability is 0.795, which is greater than 0.7. The minimum AVE value is 0.493, which is about 0.5. The square root of AVE is greater than the correlation coefficient of each variable. Therefore, it can be judged that the scale has good structural validity, convergence validity and discriminative validity.

Table 3 : Path Analysis

Path			Estimate	S.E.	C.R.	Standardized Estimate	P	Result
Risk Attitude	<---	Financial Literacy	0.254	0.059	4.287	0.283	***	Support
Credit Availability	<---	Financial Literacy	0.502	0.067	7.485	0.453	***	Support
Credit Availability	<---	Risk Attitude	0.449	0.073	6.193	0.364	***	Support

CMIN=56.364, DF=51, CMIN/DF=1.105, GFI=0.976, AGFI=0.964, NFI=0.97, RFI=0.962, IFI=0.997, TLI=0.996, CFI=0.997, RMSEA=0.017

The path analysis results in Table 3 show that Financial Literacy has a significant impact on Risk Attitude and Financing Availability ($p < 0.001$), and the standardized path coefficients were 0.283 and 0.453, respectively. Risk Attitude has a significant impact on Financing Availability ($p < 0.001$), the standardized path coefficient is 0.364.

Table 4 : Mediation Effect Analysis

Mediation effect		Financial Literacy	Risk Attitude
Risk Attitude	Direct Effects	0.283**	
	Indirect Effects		
	Total Effects	0.283**	
Credit Availability	Direct Effects	0.453**	0.364**
	Indirect Effects	0.103**	
	Total Effects	0.556**	0.364**

As shown in Table 4, the intermediary effect test results show that Financial Literacy has a significant direct effect on Credit Availability, and the standardized path coefficient is 0.453. The total effect of Financial Literacy on Credit Availability is significant, and the path coefficient after standardization is 0.556. The direct effect of Financial Literacy on Risk Attitude is significant, and the standardized path coefficient is 0.283. The direct effect of Risk Attitude on Credit Availability is significant, and the standardized path coefficient is 0.364. Therefore, it is concluded that Risk Attitude has a significant and partial mediating effect between Financial Literacy and Credit Availability.

Conclusions

According to the above sample study of farmers in Jiangsu Province, China, the analysis conclusions are as follows :

1. The level distribution of financial literacy and risk attitude of farmers is different among groups

At present, the financial literacy level of rural farmers in Jiangsu Province is generally low, and there are great differences among different groups, especially the differences in age and education status. Due to the lack of systematic professional learning, farmers of high age and low education level are not enough to master much financial knowledge and have few basic financial skills. Moreover, most farmers participate in credit behavior rationally. In addition, farmers have a strong sense of risk and tend to avoid credit products. This is mainly because farmers psychologically reject the areas they do not

know enough about, refuse to accept and are afraid to bear the risks and losses after acceptance. In different groups, the performance of this sense of risk is also very different. The younger generation and farmers in developed areas tend to be risk averse, while farmers with low education level are risk averse.

2. Farmers' financial literacy contributes to improving their credit availability

Farmers' financial literacy has a significant positive impact on the level of access to credit, because farmers with more financial knowledge and skills generally have a better understanding of the existing lending process and related policies, and will not hesitate too much to choose, so they are more likely to obtain loans and get loans faster. Therefore, the financial literacy level of farmers can be improved, so as to promote farmers to participate in credit activities more actively and effectively, so that they can spontaneously regulate their lending behavior, and improve the environment of rural credit market.

3. Farmers' risk attitude contributes to improving their credit availability

The effect of farmers' risk attitude on their credit availability is similar to that of financial literacy, both of which have significant positive effects. The higher the level of risk attitude of farmers, the more risk preference farmers tend to have, this type of farmers will be more likely to participate in the high-risk market, that is, farmers will be more likely to participate in the rural financial credit market, because farmers' risk attitude will be improved, farmers' cognition of risk will be greatly changed. The previous situation of avoiding most financial activities will also be improved, and farmers' cognition and judgment of risks will become more "bold" rather than overly cautious. Compared with risk-neutral farmers and risk-averse farmers, farmers with risk preference are more likely to participate in the credit market, and their understanding of risks is optimistic and positive. In contrast, risk averse farmers are less likely to participate in this risk market.

4. Risk Attitude mediates the relationship between Financial Literacy and Credit Availability

The improvement of farmers' financial literacy will directly improve their access to credit, but it can also improve their access to credit by changing their risk attitude. This is because the higher the level of financial literacy, the better the ability of farmers to judge risks, so that farmers will not blindly avoid financial activities such as credit, and will rationally chooses credit products. In addition, the higher the level of financial literacy of farmers, the more prone they are to risk preference, and the participation rate of farmers in risk markets such as credit will be greatly improved, so the possibility of farmers to obtain credit will be greatly improved.

Implications

First of all, in view of the current situation that farmers' financial literacy and risk attitude are generally low, the government should pay more attention to the financial knowledge and mental health education of rural residents, so as to improve the level of farmers' financial literacy and risk attitude.

Second, financial institutions should take measures to understand the level of financial literacy and risk attitude of farmers, and classify farmers in need of credit according to these two aspects. Design products for target users, increase efforts to develop innovative, scientific, effective and targeted credit products, and formulate differentiated loan conditions for farmers with different levels of financial literacy, so that the needs of different farmers can be met.

Finally, farmers themselves should strengthen the study of financial knowledge and skills, strengthen their understanding of financial products, pay more attention to the awareness

of financial current events, seize opportunities, improve their financial literacy and risk judgment ability through various ways, so that they can think rationally and make rational decisions.

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